

## Amendments to the Claims:

Claim 1 (Currently amended) A computer system for calculating a pharmacokinetic behavior of a chemical substance in an insect based on at least one physicochemical property of said chemical substance, the computer system , comprising:

a physiologically based pharmacokinetic simulation model ~~[[ (102) ]]~~ of said insect for predicting concentration/time profiles of the chemical substance ~~in compartments of the insect, the simulation model using at least one parameter which is dependent on the substance, the physiological based pharmacokinetic simulation model being represented by a system of coupled differential equations, the differential equations describing the mass transport, the distribution, the metabolism and the excretion of chemical substances in said insect on the basis of the following substance-dependent parameters: rate coefficients for mass transport between the organs of said insect, organ/haemolymph distribution coefficients, metabolism rate coefficients, and excretion rate coefficients;~~

a database containing physicochemical properties and experimentally determined substance-dependent parameters of test substances;

a prediction module ~~[[ (110) ]]~~ for ~~predicting~~ calculating the at least one substance-dependent parameters of the chemical substance to be studied, which are required by the physiological based pharmacokinetic simulation model, from at least one on the basis of a physicochemical property of the substance by means of the relations stored in said database

an input/output module for input of at least one the physicochemical property of a chemical substance to be studied and for output of simulated concentration/time profiles of the chemical substance for a user of said computer system.

Claims 2-4 (canceled)

Claim 5 (Original) Computer system according to Claim 1, wherein said

USSN: 10/714,791

Reply to Office Action of 10/31/2007

Page 2